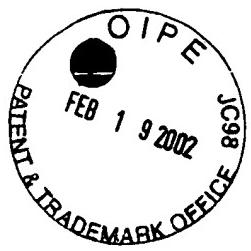


AP// #11
PATENT
0020-4699P

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of Before the Board of Appeals
YOSHIDA, Kazunari et al. Appeal No.:
Appl. No.: 09/551,871 Group: 3711
Filed: April 18, 2000 Examiner: Hunter, A.
Conf.: 2420
For: MULTI-PIECE SOLID GOLF BALL

A P P E A L B R I E F



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APPEAL BRIEF TRANSMITTAL FORM

Assistant Commissioner for Patents
Washington, D.C. 20231:

February 19, 2002

Sir:

Transmitted herewith is an Appeal Brief (in triplicate) on behalf of the Appellants in connection with the above-identified application.

The enclosed document is being transmitted via the Certificate of Mailing provisions of 37 C.F.R. 1.8.

A Notice of Appeal was filed on December 19, 2001.

Applicant claims small entity status in accordance with 37 C.F.R. § 1.27

The fee has been calculated as shown below:

Extension of time fee pursuant to 37 C.F.R. §§ 1.17 and 1.136(a) -

Fee for filing an Appeal Brief - \$320.00 (large entity).

Check(s) in the amount of \$320.00 is(are) attached.

Please charge Deposit Account No. 02-2448 in the amount of \$0.00. A triplicate copy of this sheet is attached.

Appl. No. 09/551,871

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

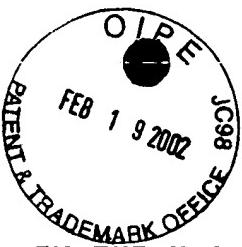
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0020-4699P

(Rev. 11/07/01)



PATENT
0020-4699P

IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of Before the Board of Appeals
YOSHIDA, Kazunari et al. Appeal No.:
Appl. No.: 09/551,781 Group: 3711
Filed: April 18, 2000 Examiner: Hunter, A.
Conf.: 2420
For: MULTI-PIECE SOLID GOLF BALL

BRIEF ON BEHALF OF APPELLANTS

Assistant Commissioner for Patents
Washington, D.C. 20231

February 19, 2002

Sir:

Pursuant to the Notice of Appeal filed on December 19, 2001, this is an Appeal from the Examiner's Final Rejection of Claims 1-5 dated June 19, 2001 in the above-identified application.

1. REAL PARTY IN INTEREST

The Assignee herein is Sumitomo Rubber Industries, Ltd., 6-9, 3-chome Wakino-hama-cho, Chuo-ku, Kobe-shi, Hyogo-ken, Japan. The Assignment of all right and interest herein was recorded on August 22, 2000, at Reel 11098, Frames 253-255.

2. RELATED APPEALS OR INTERFERENCES

There are no related appeals or interferences known to Appellants or Appellants' representatives that have a bearing on the Board's decision herein.

3. STATUS OF THE CLAIMS

Claims 1-5 have been finally rejected and are under appeal by Notice of Appeal which was filed on December 19, 2001. A copy of the claims under appeal is furnished in Appendix 1 attached hereto.

4. STATUS OF THE AMENDMENTS

The claims as presented in Appendix 1 are essentially the same claims as originally presented in this application, with the exception of claim 1 that was slightly changed to improve the grammar and syntax by addition of a comma and omission of the word 'and' at the end of the fourth line and the addition of the word "and" at the end of the 7th line of claim 1.

5. SUMMARY OF THE INVENTION

The present invention is directed to a multi-piece golf ball having a soft and good shot feel, and having excellent flight performance by accomplishing high rebound characteristics and a high launch angle when hit by golfers regardless of either the club head speed at which the ball is struck or the club which is

used. This is accomplished by adjusting the diameter, center hardness and hardness distribution of the inner core, the thickness and surface hardness of the outer core, the hardness distribution of the core being within a specified range.

Specifically, the invention is directed to a multi-piece golf ball with an inner core and an outer core formed thereon wherein the inner core has a diameter of 30 to 40.4 mm; a surface hardness in JIS-C hardness of 60 to 85, and a center hardness in which the JIS-C hardness is lower than the surface hardness by 5 to 30. Finally, it is preferable that the outermost layer of the cover have a thickness of 1.0 to 3.0 mm and a surface hardness in Shore D hardness of 58 to 75, and the outer core have a thickness of 0.2 to 0.9 mm.

6. ISSUES

Issue No.1. - Is it obvious to fashion a golf ball as defined by claims 1-5 in the present application in view of the cited Sugimoto et al. patent 6,045,459 under 35 U.S.C. §103(a)?

Issue No.2. - Was it error for the Examiner to reject the claims 1-5 in the present application because the Appellant was "using negative statistics in order to obtain an improved golf ball"?

7. GROUPING OF THE CLAIMS

Group I:

Claims 1, 2 and 3 are directed to a multi-piece solid golf ball that includes a core made up of an inner and an outer core and one or more layers of cover over the core; the inner core has a diameter of 30 to 40.4 mm; a surface hardness in JIS-C hardness of 60 to 85, and a center hardness in JIS-C hardness of the inner core is lower than the surface hardness by 5 to 30, and the outer core has a thickness of 0.2 to 1.3 mm and a surface hardness in JIC-C hardness of the outer core is lower than the surface hardness of the inner core by 2 to 30.

Claim 2 depends from claim 1 and defines the outer core as formed from a rubber composition comprising polybutadiene, a co-crosslinking agent, an organic peroxide and a filler; claim 3 depends from claim 1 and defines the co-crosslinking agent for the outer core as magnesium methacrylate.

Group II:

Claim 4 is directed to a multi-piece solid golf ball as defined by claim 1 with an outer core having a thickness of 0.2 to 0.9 mm. This is a narrower scope than claim 1 and hence is directed to a patentably distinct invention.

Group III:

Claim 5 is directed to a multi-piece solid golf ball as defined by claim 1 with the outermost layer of the cover having a thickness of 1 to 3 mm and a surface hardness in Shore D hardness of 58 to 75. This is an invention that is distinct from either Group I or Group II inventions because of different scope with different parameters defining the outermost layer of the cover as contrasted with the definition of the outer layer in claim 1.

Groups I, II and III are directed to distinctly different inventions and hence do not stand or fall together.

8. ARGUMENTS

The Appellants contend that the three groups of claims 1, 2 and 3 do not stand or fall together, since they are separately patentable over the art cited by the Examiner, as will be more fully explained herein below.

Group I claims 1, 2 and 3 are separately patentable over the cited art.

The present invention is directed to a multi-piece solid golf ball made up of a core that consists of an inner and an outer portion and one or more layers of cover covering the core. In this structure, which is similar to the three-piece solid golf ball of Sugimoto et al., the dimensions and hardness of the various elements are controlled in a way that is distinct from

and patentable over the Sugimoto et al. three-piece solid golf ball. The differences are as follows. The inner core diameter according to claim 1 of the present invention is 30 to 40.4 mm, whereas the inner core diameter according to Sugimoto et al. is 31 to 36 mm (column 2, line 35).

In the present invention, the inner core's center hardness in JIS-C measurement is lower than the surface of the inner core by 5 to 30. Whereas in Sugimoto et al. the center hardness of the inner core is greater than or equal to the surface hardness on the inner core (column 2, lines 52-4).

In the present invention, the outer layer core hardness in JIS-C measurement of the surface of the outer layer core is lower than the inner layer surface by 2 to 30, whereas in Sugimoto et al. the inner layer core surface is 5 to 25 lower than the outer layer core surface hardness (column 2, lines 55-57).

The thickness of the outer layer core in the present invention is 0.2 to 1.3 mm, whereas in Sugimoto et al. the thickness of the outer layer core is 1 to 5 mm (column 2, lines 60-61).

In the present invention, the diameter of the inner and the outer core layers is in the range of 30.2 to 41.7 mm as derived from the dimensions in claim 1 of the present application at lines 5 and 9, whereas in Sugimoto et al. the diameter of the inner plus the outer layer cores is 38.0 to 40.0 mm (column 1, lines 61-62). In the Examples of the specification,

(specification, pages 41-42) it is seen that the present invention has resulted in a three-piece solid golf ball with excellent performance for golfers who swing the golf club at low head speed. Up to the present time, including the golf ball according to Sugimoto et al., there has been no golf ball that is suitable for all golfers who swing the golf club at high or low head speed. (see specification, page 5, lines 19-25 to page 6, lines 1-8).

The present invention provides a three-piece solid golf ball that is long in flight distance and is suitable for golfers who swing the golf club at low head speed. According to the present invention, the resultant three-piece solid golf ball not only has long flight distance, but has good shot feel when hit by an iron club or putter. In contrast, the Sugimoto et al. three-piece solid golf ball shows poor shot feel for golfers having medium or low head speed, because the golf ball is not easily deformed when hit and requires much stronger force to deform because of its hardness distribution.

It is clear that the Sugimoto et al. patent does not show good shot feel for golfers having medium or low head speed nor for the use of a driver as well as a putter and other iron clubs. In column 6 of Sugimoto et al., lines 44-63, the test method applied for the golf balls according to Sugimoto et al. is described. A driver attached to a swing robot hits a golf ball according to Sugimoto et al. at a head speed of 45 m per second.

Also, the flight distance and durability are tested with the same instrument, but shot feel is determined by an evaluation from 10 professional golfers. Only 10 of the golfers were tested and they were all professional golfers who presumably hit the ball at high head speed with the club. Moreover, only a driver was used for evaluation in contrast to the testing carried out by the inventors in the present application.

At pages 33 through 34, the test methods and evaluation of flight performance and shot feel are described. According to these tests, golfers who swing the club at high head speed not less than 43 m per second, and golfers who swing the golf club a low head speed, not less than 38 m per second, are tested using a No. 1 wood club, a driver, as in Sugimoto et al. and a No. 5 iron club and also using a putter. The results of the testing are set forth as indicated above on pages 41 and 42 of the specification as shown in Tables 9 to 11 on the preceding pages 38-39 and 40. The golf balls according to the present invention of Examples 1 to 12, have adjusted the diameter, surface hardness and hardness distribution of the inner core, the thickness of the outer core and hardness distribution of the core to a specified range having a very soft good shot feel when hit by golfers who swing the golf club at high or low speed using all the golf clubs, such as a driver to an iron club and a putter and have excellent flight performance, which is seen from a high launch angle and long flight distance when hit by a golfer who swings a golf club at

low head speed compared with the golf balls of Comparative Examples 1-5.

The data of the present specification shows the critical nature of adjusting the foregoing dimensions and other characteristics as shown in Examples 1 through 12 of the present application. There is no such showing of such criticality in the Sugimoto et al. patent nor does the Sugimoto et al. patent discuss the difference, if any, between the performance of the golf ball according to Sugimoto et al. and other golf balls as seen in the case of golfers who swing the club at high head speed compared with those who swing the club at medium or low head speed.

Furthermore, there is no motivation in the Sugimoto et al. patent to make such adjustments as are made in the present application, so as to achieve the objects of the present application with respect to golfers who hit the golf ball at high or low speeds.

Group II - claim 4, is separately patentable over the cited art.

In rejecting claim 4 under 35 U.S.C. §103(a), the Examiner is relying upon the Hayashi et al. patent to use a golf ball having an outer core with a thickness of 0.2 to 0.9 mm for optimizing resilience and shot feel. Although the Hayashi et al. patent shows an outer core thickness similar to the golf ball of

the present invention, this is where the relevancy ends inasmuch as the multi-piece golf ball of the present invention is substantially and structurally different from the golf ball of the Hayashi et al. patent. More specifically, the Hayashi et al. patent does not show the Shore D hardness values of the inner core, outer core or the cover and certainly does not suggest that the inner core has a surface hardness of 60 to 85 and a center hardness lower than the surface hardness by a factor of 5 to 30.

Similarly, there is no recognition that the outer core has a surface hardness lower than the surface hardness by a factor of 2 to 30. In fact, when comparing the golf ball of the Hayashi et al. patent with that of the present invention, we are discussing two completely different golf balls. Thus, to merely carve out one feature or one aspect of the golf ball of the Hayashi et al. patent in an effort to suggest the subject matter of claim 4 of the present invention, in effect, reconstructs the teachings of the reference in view of the Appellants own disclosure. Even if, *arguendo*, it would be possible to combine the Hayashi et al. patent with the Sugimoto et al. patent as suggested by the Examiner, said combination would still not suggest an important feature of the present invention as recited in claim 1 of the present application, wherein the center hardness of the inner core is lower than the surface hardness by a factor of 5 to 30.

Group II, claim 4 is separately patentable over Sugimoto et al. because it is directed to a narrower scope wherein the outer core of the golf ball has a thickness of 0.2 to 0.9 mm and the properties of the golf ball are superior to Sugimoto et al. for the reasons discussed above with respect to Group I. The outer core thickness of 0.2 to 0.9 mm is a preferred embodiment of the invention (see specification, page 8, lines 16 and 17).

Group III, claim 5 is separately patentable over the cited art

Claim 5 covers the definition of the outermost layer of the cover of the golf ball according to the present invention as having a thickness of 1 to 3 mm and a surface hardness in Shore D hardness of 58 to 75. Thus, the subject of claim 5 is a golf ball having a narrower scope of definition than the preceding four claims and is separately patentable over the cited art.

The Examiner relies upon Sugimoto et al. to show a three-piece solid golf ball structure very similar to that of the present invention. However, it appears that in Sugimoto et al., the inner layer core center hardness is greater than the surface hardness of the inner layer core, as set forth in claim one. This is the opposite of the present invention, which claims an inner layer core center hardness that is "lower than the surface hardness by 5 to 30." [Claim 1].

Thus, the golf ball of the Sugimoto et al. reference exhibits poor shot feel, particularly for a golfer having medium or low club head speed, because the golf ball of the Sugimoto et al. reference is not easily deformed when hit and requires a much stronger force to deform the golf ball because of its hardness distribution. Thus, the golf ball of the Sugimoto et al. reference is not effective with respect to shot feel for golfers having a low club head speed whereas, because of the hardness distribution, the golf ball of the present invention achieves a soft and good shot feel regardless of either the club head speed at which the ball is struck or the club which is used. Accordingly, the Sugimoto et al. reference fails to achieve the advantageous results of the golf ball of the present invention.

In the Advisory Action of October 26, 2001, in the continuation sheet for Paragraph 5, the Examiner states that "The term "negative" is defined by the Examiner as not being desired to obtain various effects. Therefore, having an outer layer thickness less than 1 mm and inner core surface hardness greater than the inner core center hardness, as indicated by Sugimoto et al., would clearly effect (sic) the shot feel and durability of the golf ball. One having ordinary skill in the art would clearly see the Applicants' invention as being obvious in light of the Sugimoto et al. reference."

The Examiner's reliance on an argument as to the use of negative statistics is not understood. First of all, according

to the Manual of Patent Examining Procedure, Section 2173.05(i), negative limitations are not prohibited in defining claims so long as the boundaries of the patent protection sought are set forth definitely and the main claim complies with the requirements of 35 U.S.C. 112, second paragraph. In re Wakefield, 164 USPQ 626,641 (CCPA1970) Sugimoto et al. is directed to a golf ball with a center hardness of the inner core that is greater than the surface hardness of the inner core since in column 2, at lines 52-54, Sugimoto et al. states that when the surface hardness exceeds the center portion hardness, shot feel is poor and the durability deteriorates, but in the present invention, the center hardness of the inner core is lower than the surface hardness of the inner core by 5 to 30 JIS-C. In contrast, Sugimoto et al., having a center hardness of the inner core greater than the surface hardness of the inner core, must have a surface hardness at least equal to or greater than 60-85 JIS-C, which is the surface hardness of the inner core. Claim 1 of the present application does not have a limitation as to the cover of the three-piece solid golf ball, but it is stated at page 10 of the specification, lines 5 to 7, that the outermost layer has a thickness of 1.0 to 3.0 mm, preferably 1.5 to 2.4 mm. However, in differentiating from Sugimoto et al. and the present invention, the cover thickness is not an issue. The essential characteristics of the golf ball according to the present invention are defined in the present claim 1 and as

stated above, these parameters are distinguishing over Sugimoto et al. and not obvious from Sugimoto et al.

The Examiner's definition of "negative" in the context of the present appeal is believed to be erroneous and not compelling as evidence of obviousness with respect to the presently claimed invention. The negative aspect of the present claims is primarily directed to those parameters which, while they may overlap what has been disclosed as features of a golf ball in Sugimoto et al. taken as a whole, these parameters as defined in claim 1 in the present application, clearly differentiate from the Sugimoto et al. golf ball and from the foregoing discussion. The Sugimoto et al. golf ball does not disclose or teach how to make golf balls that have the desired characteristics of the presently claimed golf balls, namely, having good shot feel and other characteristics for both professional and highly skilled golfers as well as for less skilled and amateur golfers. On the basis of different head speeds, the tests conducted show results that cannot be predicted from the Sugimoto et al. reference. In view of this, the rejection of the claims based upon the view of what is a negative aspect as defined by the Examiner in the previously quoted definition from the Advisory Action of October 26, 2001, is basis for requiring the withdrawal of the rejections based thereon. The conclusion regarding the obviousness of the claims is not apparent from the assertions of the Examiner with regard to the outer layer thickness of less than 1 mm and the

inner core surface hardness greater than the inner core center hardness as being qualities indicated by Sugimoto et al., that would clearly affect the shot feel and durability of the golf ball.

The experimental evidence disclosed in the present application as discussed herein above, rebuts any presumption of obviousness with respect to the disclosure of Sugimoto et al. It is well settled law that ranges that overlap or lie outside ranges disclosed by the prior art may be patentable if the Applicant can show criticality in the claimed range by evidence of unexpected results. In re Malagari, 182USPQ 549 (CCPA 1974).

This is consistent with the general holding on proof of obviousness as has been established by the landmark case of Graham v. John Deere Co., 383US1, 148 USPQ 459 (1966).

C O N C L U S I O N

In conclusion and in summary, it is respectfully submitted that by the foregoing arguments it has been shown that the errors of the Examiner described in the section under 'Issues' have occurred and the rejection of all claims should be reversed by the Honorable Board of Appeals by finding that there is no case of obviousness and the claims on appeal are patentable over the art cited by the Examiner. In view of the evidence of critical properties of the golf balls taught in the specification as

compared with the disclosure of the prior art, Sugimoto et al. reference, withdrawal of all rejections is respectfully solicited.

It is also urged that the fact that the claims contain negative aspects, excluding from the scope of the claim parameters as set forth in the disclosure of the specification to differentiate from the reference disclosure of Sugimoto et al. was not an error and was not a basis for rejection of the claims.

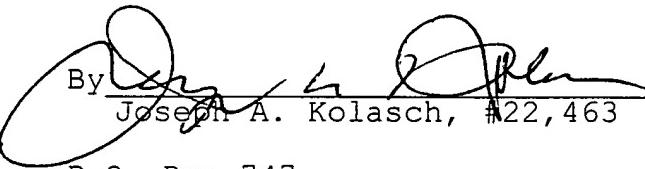
In view of the foregoing, it is respectfully requested from the Honorable Board of Appeals that the rejections of all appealed claims be reversed and withdrawn and that allowance of this application be ordered by the Honorable Board of Appeals.

The required Appeal Brief Fee in the amount of \$320.00 is attached hereto.

Please charge any fees or credit any overpayment pursuant to 37 C.F.R. 1.16 or 1.17 to Deposit Account No. 02-2448.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP


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Attachments

A P P E N D I X I

CLAIMS ON APPEAL

Claim 1. (Amended) A multi-piece solid golf ball comprising a core consisting of an inner core and an outer core formed on the inner core, and one or more layers of cover covering the core,

wherein the inner core has a diameter of 30 to 40.4 mm, a surface hardness in JIS-C hardness of 60 to 85, and a center hardness in JIS-C hardness of the inner core is lower than the surface hardness by 5 to 30, and

the outer core has a thickness of 0.2 to 1.3 mm, and a surface hardness in JIS-C hardness of the outer core is lower than the surface hardness of the inner core by 2 to 30.

Claim 2. The multi-piece solid golf ball according to claim 1, wherein the outer core is formed from a rubber composition comprising polybutadiene, a co-crosslinking agent, an organic peroxide and a filler.

Claim 3. The multi-piece solid golf ball according to claim 2, wherein the co-crosslinking agent for the outer core is magnesium methacrylate.

Claim 4. The multi-piece solid golf ball according to claim 1, wherein the outer core has a thickness of 0.2 to 0.9 mm.

Claim 5. The multi-piece solid golf ball according to claim 1, wherein the outermost layer of the cover has a thickness of 1.0 to 3.0 mm and a surface hardness in Shore D hardness of 58 to 75.

A P P E N D I X II

A U T H O R I T I T E S C I T E D I N B R I E F

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